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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,537	02/09/2001	Edouard Koulik	P-8722	5756

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EXAMINER

JUNG, WILLIAM C

ART UNIT PAPER NUMBER

3737

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/779,537

Applicant(s)

KOULIK, EDOUARD

Examiner

William Jung

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 6, and 8 are rejected under 35 U.S.C. 102(b) as being unpatentable by

Gomez Alvarez-Arenas et al (IEEE Ultrasonics Symposium).

Gomez Alvarez-Arenas discloses of ultrasonic transducer (device and method of producing) design where the piezoelectric material is made of porous PZT ceramic. The porous material is made by phase separation of mixture consisting of polymer and fluid. The fluid is drained and the properties of the resulting porous ceramic is dependent on the phase of the of the composition separation (p. 519).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9, 10, 11, 14, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gomez Alvarez-Arenas et al* in view of *Hillenbrand et al* (IEEE Conference).

Gomez Alvarez-Arenas substantially discloses of all claimed inventions in claims 9, 10, 11, 14, 16, and 18.

Hillenbrand discloses of producing polymer/air composite PZT material with porous structure. The method of production includes irradiating polymer (p. 161; p. 164). In addition, Hillenbrand generates an image of the device using SEM, however, it would have been obvious to use other types of imaging system such as ultrasound or x-ray (.

Hillenbrand's method of producing a porous PZT material for an ultrasonic imaging device is clearly anticipated. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was to apply the teachings of Gomez Alvarez-Arenas to the teachings of Hillenbrand to achieve the claimed inventions.

5. Claims 3, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gomez Alvarez-Arenas et al* as applied to claims 1 and 6 above, and further in view of *Bosley* (US 5,289,831).

Gomez Alvarez-Arenas substantially discloses of all claimed inventions in claims 3, 4, and 7.

Bosley discloses of an ultrasonic catheter where the transducer element of the catheter consists of polymer based PZT with porous structure (col. 7, line 46 – col. 8, line 32). Also, Bosley's invention is insertable into a medium such as human or animal (col. 8, line 41-56). Bosley utilized porous transducer structure to provide desired acoustic matching layer relative to the surrounding medium of the catheter. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Gomez Alvarez-Arenas to the teachings of Bosley to achieve the claimed inventions.

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6. Claims 12, 13, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gomez Alvarez-Arenas et al* and *Hillenbrand et al* as applied to claims 11, 14, and 16 above, and further in view of *Bosley*.

Gomez Alvarez-Arenas and Hillenbrand substantially disclose of all claimed inventions in claims 3, 4, and 7 as described above.

Bosley discloses of an ultrasonic catheter where the transducer element of the catheter consists of polymer based PZT with porous structure (col. 7, line 46 – col. 8, line 32). Also, Bosley's invention is insertable into a medium such as human or animal (col. 8, line 41-56). Bosley utilized porous transducer structure to provide desired acoustic matching layer relative to the surrounding medium of the catheter. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Gomez Alvarez-Arenas and Hillenbrand to the teachings of Bosley to achieve the claimed inventions.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung whose telephone number is 703-605-4364. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on 703-305-3256. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0758 for regular communications and 703-308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

William Jung
Examiner
Art Unit 3737

wcj
July 19, 2002


Francis J. Jaworski
Primary Examiner